

In The Ring

Mission fit a Ring Dome tweeter to their budget QX2 MkII loudspeaker. Noel Keywood listens to the outcome.



This is a very interesting little loudspeaker, one that had me listening intently over a long period. Mission's recently upgraded QX-2 MkII standmounter also had me puzzled, yet impressed too. Especially at a price of £399 per pair.

I was puzzled by what can't be seen or easily identified, the hidden and little discussed issue of cone material and the "flavour" of the sound. To illustrate this, imagine the difference between a paper cone and a metal cone. Hit a cardboard box – the one that just came in from Amazon will do – and an

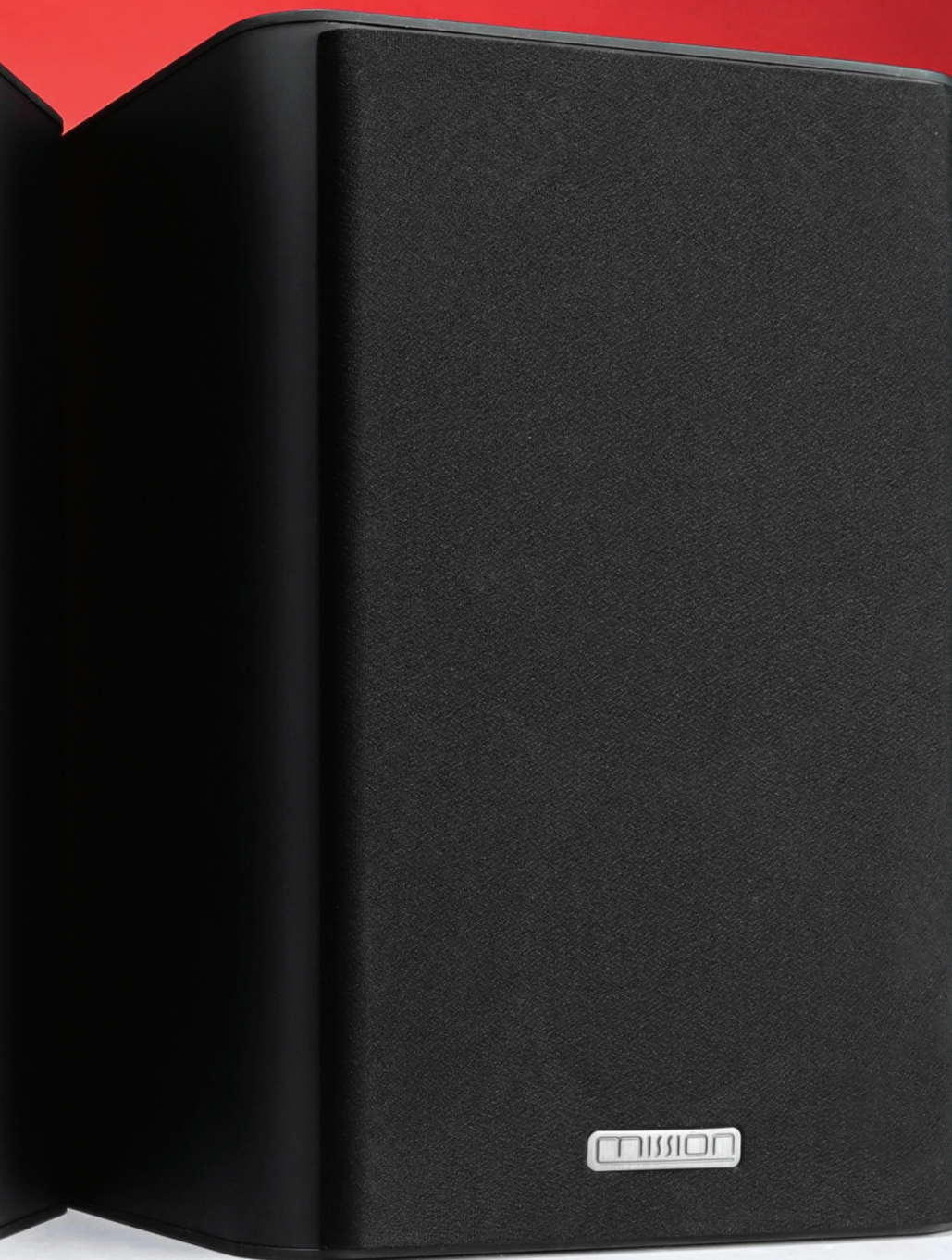
aluminium saucepan and they'll sound different. It's as simple as that. I'll cover this in greater detail later when talking about sound quality.

Mission don't use paper or metal cones in the QX-2 MkII, but a modern composite cone comprising pulp with acrylic fibres. Point number one – this is not a metal cone, so it won't have a bright or ringy quality. I knew I could expect a darker sound. In a novel arrangement a rear cone made of this material drives a front fibre dish made of the same material, explaining the drive unit's unusual appearance and perhaps

unusual sound.

There's a rubber surround with serrated acoustic damping frame in front of it that contributes to an appearance of teeth. These scatter reflections Mission say, and tapered indentations have been added to the tweeter surround and even the rear port for similar purpose. Even though a budget speaker, the chassis is rigid cast alloy casting rather than pressed steel with two ferrite magnets to energise the yoke.

The 'speaker itself, in physical form, is quite large and a tad tubby, measuring 220mm wide, 300mm deep and 320mm high – purposed

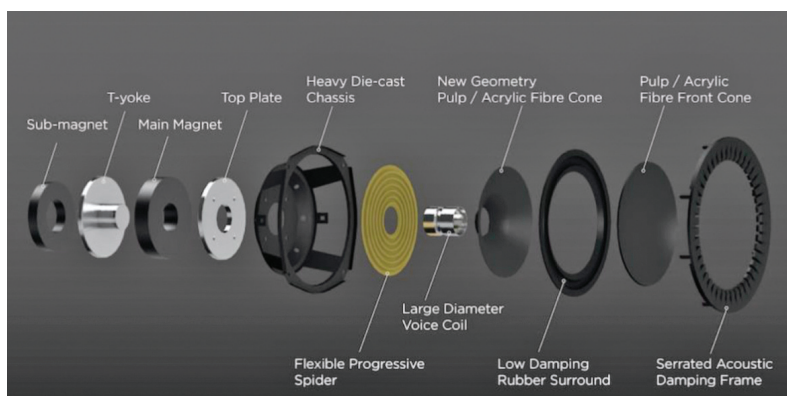


for stand mounting, but you could also shelf mount it. There's a rear port but these only need a few centimetres (1in) of rear breathing space. Unusually, Mission fit a solid aluminium base and top plate that add weight and rigidity – and also suited our top-spiked stands. The 'speakers don't come with spikes or pads but this is a good strong base able to accept such additions, perhaps attached using Araldite, by anyone wanting to get creative. These plates contribute to a relatively high weight of 8.5kgs, making the cabinets feel unusually sturdy for their size. In addition to black and white finishes there is also a Walnut wood veneered version.

What Mission were keen to point out in their Press info is that the MkII has been fitted with a Ring Dome tweeter. And these are fascinating devices that truly do sound better. In a nutshell they have an annular diaphragm anchored at centre and at edge, driven by a voice coil attached centrally to the ring. This creates a pulsating ring, with small central phase plug to break up (prevent) destructive phase cancellations.



The shallow dish-shaped pulp/acrylic fibre front face is attached to a rear cone made of the same material, as shown below.



An unusual rear port with serrations to improve air flow, Mission say. Tuned to 40Hz it also helps the small 'speaker go low – right down to 30Hz our measurements show. One pair of terminals is fitted for mono-wiring; they accept 4mm banana plugs, bare wires or spades.

Ring Domes are more expensive than normal dome tweeters, but they have smoother frequency response and commensurately smoother sound that lacks the slightly spiky, coarse quality of a conventional dome. Also note this is not an alloy dome tweeter: again no metal. Dare I say it, but using a Ring Dome on any speaker is a mission statement: "high quality treble a priority".

See also that the tweeter is positioned as close as possible to the woofer to minimise phase cancellations caused by distance, and Mission say the crossover has been designed for best integration of drivers at the ear's listening height.

As a short summary, the small QX-2 MkII is heavier, better built and better equipped than most else, at just about any price let alone £399. But our measurements showed the 'speaker has designed-in ability not mentioned in the Press info, that I'll get straight into next, because I suspect it is important to most listeners: bass.

SOUND QUALITY

This is a small loudspeaker with "bass". Measurement showed the QX-2 MkII went unusually low. It is possible to do this by sacrificing sensitivity but it was satisfactory at 85dB according to our measurements; think 60W-100W amps. Bringing me to the use of a PrimaLuna EVO300 Hybrid amplifier rather than the softer sound of our Creek iA20 amplifier (both 100W). It has enough power and a lively sound that suited the Missions since they were, I found, quite a laid-back loudspeaker with an easy going milieu. Yet the PrimaLuna gripped them nicely to

deliver strong low bass. Not quite floor stander bass, but a nice deep presence behind Antonio Forcione's Tears of Joy from a synth that others of the size miss. The ability to tease out deep bass lines, synths and such like made the QX-2 MkIIs sound bigger than their physical size: "did that come from there?" They don't deliver floorstander power and cannot be taken too loud without starting to become boxy, so not disco machines. However, they go plenty loud enough for most people whilst still delivering a satisfyingly low rumble from what looks like an unfeasibly small cabinet.

Because the lows are there but not too emphasised the QX-2 MkII will likely suit small-ish rooms without inducing boom. Having

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said that, they don't come with foam bungs to damp bass down if need be. It was an impressive performance though – at the size and the price.

Further up the band the two-part composite cone had me a little confused. It has a mild, yet dark flavour to its sound, with good rendition of depth. Josefine Chronholm's In Your Wild Garden had a weighty presence to it, her vocals cutting out clearly from a smoothly composed sound stage. Fleetwood Mac's Silver Spring had some edginess to vocals I'd picked up on earlier listening that seemingly popped out of the darkness, likely due to a rise in output from the tweeter around 5kHz. This apart treble was refined and extended.

CONCLUSION

For all those looking for deep bass and a powerful sound, the sturdy Mission QX-2 MkIIs are a go-to at the price, especially for those who insist on stand or shelf mounting. Having a smooth, dark sound and pleasant treble from a ring-dome tweeter they are well worth hearing.



Mission's ring-dome tweeter – an annular diaphragm that forms a ring, driven by a voice coil. At centre lies a static phase plug to break up cancellations across the diaphragm. Ring domes are more complex than traditional domes but give smoother response by avoiding cavitation of dome apex.

MEASURED PERFORMANCE

The QX-2 MkII runs very low for a small loudspeaker, reaching down to 30Hz our third-octave pink noise analysis shows. This suggests it will produce deep bass down to rumbling subsonics. The port (red trace) contributes to this and damps the bass unit strongly over a broad band, so for a sense of bounce this is a loudspeaker that needs near-wall positioning to work with resonant room modes, bearing in mind a room 19ft long is needed to fully support 30Hz.

To run so low some sensitivity has been sacrificed, a modest 85dB being produced from one nominal Watt (2.8V) of input, which is loud but not very loud. Amplifiers of 60W or more would be needed for high volume. Overall impedance is low too, just 5Ω, likely to maximise sensitivity.

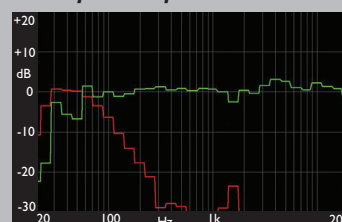
The bass/midrange unit reaches up to 2.5kHz, handing over to a tweeter that runs smoothly up to 20kHz. Output is strong around 4kHz where there is a +2dB peak and this will add some brightness but overall lift in energy terms (plateau width) is not great. Integration between the drive units was very good too, making for consistency of tonal

balance with differing seating heights.

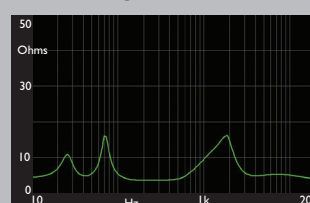
The QX-2 MkII is able to produce unusually deep bass for its size, but it is strongly damped to compensate for room modes, so will not sound bass heavy. With a broadly correct tonal balance and some treble lift it will also deliver plenty of detail. **NK**

FREQUENCY RESPONSE

Green - driver output
Red - port output



IMPEDANCE



MISSION QX-2 MKII £399



OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT

Big bass and smooth demeanour. Seductive listening at a low price.

FOR

- deep bass
- smooth rich midband
- sturdy build

AGAINST

- some sharpness at times.
- boxy at high volume

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